Remarks

Applicants and the undersigned reviewed the pending Office Action carefully before preparing this response. Reconsideration is respectfully requested. Nonetheless, in light of the positions presented herein, this application is believed to be in condition for allowance.

Addressing one of several preliminary matters, Applicants believe the Oath/Declaration previously submitted is proper in all respects. No wording or affirmation of the Oath/Declaration, itself, was amended after signature. Rather, only the mailing address of co-inventor Peiwang Zhu was corrected to reflect a recent move to a new apartment. The address change was made before execution of the document, as indicated by the co-inventor's dated signature, consistent with what has been accepted office practice. If any issue remains, the Examiner is invited to contact the undersigned by telephone and a new Oath/Declaration can be obtained.

The Examiner raised several concerns regarding the figures. Replacement sheets providing the requested corrections are hereby submitted. Again, the Examiner is invited to contact the undersigned should any issue remain.

As a final preliminary matter, a substitute specification is hereby submitted to address the recited informalities. Various trademarks are capitalized, as requested. Several acronyms are defined, without adding new matter, as affirmed in the accompanying statement.

More substantively, the Examiner rejected Claim 18 under 35 U.S.C. §112, first paragraph, for reasons of non-enablement. Responsive thereto, the Examiner is referred to page 10 of the specification; examples 3b-3c describe a general methodology for preparation of a substrate such as that recited in Claim 18. As illustrated in scheme 2, condensation of a hydroxylated substrate with an aminoalkyltrialkoxysilane provides a surface functionalized for further reaction and/or self-assembly. In light of the

specification and as would be understood by those skilled in the art, it is respectfully suggested that this rejection be withdrawn.

Claims 1-17 were rejected under 35 U.S.C. §102(a) as anticipated by Zhu. Applicants appreciate the Examiner's concern, but respectfully disagree. The Zhu article was presented in September, 2003, with a website preprint appearing in August, 2003. (See, the materials of Exhibit A, incorporated herein by reference.) The corresponding subject matter was disclosed much earlier in the February, 2003 provisional application, from which the present application claims priority. According to this timeline, the Zhu article does not anticipate the present invention. The rejection should be withdrawn, with the subject claims allowed to proceed toward issue.

Several other claims were rejected under 35 U.S.C. §102(b) as anticipated by the Meyer and/or Fleck references. Applicants appreciate the Examiner's interest in efficient prosecution, but respectfully disagree. Neither Meyer nor Fleck anticipate the claimed invention. Referring to independent Claims 1, 10 and 12, none of the many compounds in Meyer or Fleck disclose Applicants' hydrogen-donor (D) or hydrogen-acceptor (A) moieties. None of the cited A or D moieties are functionally capable of hydrogen-bonding interaction with another or a structurally related compound. For instance, without limitation, the Fleck phenyl moiety cited by the Examiner as comparable to Applicants' A and D is functionally incapable of hydrogen-bonding interaction. Accordingly, neither Meyer nor Fleck is an anticipatory reference. Each rejection should be withdrawn, with the subject claims allowed to proceed toward issue.

Claim 18 was rejected under 35 U.S.C. §103(a) as unpatentable over Zhu, in combination with the Richter reference. Inasmuch as Zhu is not prior art, its combination with Richter is an inappropriate basis for obviousness. Likewise, this rejection should be withdrawn, with the subject claim allowed to proceed toward issue.

Finally, several claims were rejected under the Doctrine of Obviousness-type double patenting in view of the prior Marks patent. However, the Marks patent does not

disclose or suggest the present hydrogen-donor or hydrogen-acceptor moieties. The chromophore compounds in the prior Marks patent are chemically and structurally distinct, and the corresponding self-assembly procedure would lead one away from the present invention. Again, Applicants appreciate the Examiner's interest in efficient prosecution, but there is no obviousness concern raised by the prior Marks patent. As such, this rejection should also be withdrawn, with the subject claims to be allowed to proceed toward issue.

This application is now believed to be condition for allowance. Consistent therewith, prompt favorable action is respectfully requested. The examiner is invited to contact the undersigned by telephone should any issue remain. Thank you for your time and consideration.

Respectfully submitted,

By: _____
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Date: April 3, 2006

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# of Polymeric Materials: Science and ngineering Division Preprints

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Exhibit A

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Advances in Epoxide and Polyurethane Coatings

Title	Author(s)
Study on crosslinkable acrylic resin modified waterborne two component polyurethane systems	M. Jia, J. Wang, B. Zhang
Effects of POSS nanoparticles on structure within thin epoxy/ POSS films: A neutrom reflectivity study	H. Jeon, J. Rameshwaram
Improvement of thermal-mechanical properties using polyhedral oligomeric silsesquioxanes (POSS)-modified epoxy resins	K. Mya, J. Huang, Y. Xiao, C. He, Y. Siow, J. Dai
Copolymerization behaviour of styrene with dialkyl itaconates: Effect of the length of alkyl side chain	G. Kumar, S. Agarwaal, V. Choudhary
Synthesis and surface properties of polyurethanes from dual functional macromonomers	T. Fujiwara, U. Makal, K. Wynne
Ordering of oligourethanes on surfaces	A. Matzger, K. Kim
Functional polymer surfaces: Polyurethanes containing fluorooxetane soft blocks	U. Makal, T. Fujiwara, K. Wynne, S. Golledge

Novel UV-curable cycloaliphatic epoxy based on linseed oil	K. Zou, M. Soucek
Protective space coatings: Synthesis and preliminary analysis of a ceramer approach for nanoscale control of properties	D. Dworak, M. Soucek
UV-curable organic-inorganic hybrid films based on epoxynorbornene linseed oils	Z. Zong, M. Soucek
Lifecycle considerations in manufacturing and application of epoxy acrylate based powder coatings	M. Young, V. Tan, S. Patel, S. Kim, M. Xanthos, K. Ramani

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Assembly and Applications of Soft Interfaces

Title	Author(s)
Local thermal properties of multilayered polymer thin film	W. Sakai, Y. Tatsumi, A. Ueyasu, C. Chiang, N. Tsutsumi
Confinement effects on moisture absorption kinetics in polyelectrolyte films	B. Vogt, C. Soles, H. Lee, E. Lin, W. Wu

Self assembled monolayers of organosilcon hydrides ($RSiH_3$) supported on various oxides	R. Helmy, R. Helmy, A. Fadeev, A. Fadeev, S. Marcinko, S. Marcinko
Hydrogen transfer during pentacene sublimation at atmospheric pressure	L. Roberson, L. Roberson, J. Kowalik, J. Kowalik, L. Tolbert, L. Tolbert, C. Kloc, C. Kloc
Effect of temperature and the addition of ethyl acetate as a chain transfer agent on Mv of poly(dimethylamino)ethyl methacrylate	A. Phillips, A. Phillips, H. Lujan-Upton, H. Lujan-Upton
"Synthesis, characterization and ""tailor-making"" of gel polymers"	G. Yalin, G. Yalin, H. Lujan-Upton, H. Lujan-Upton
N-alkylamine organization and etching behavior on CdSe nanocrystals (Qdots)	R. Li, R. Li, J. Lee, J. Lee, F. Papadimitrakopoulos, F. Papadimitrakopoulos

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Smart Nano-Assemblies

Title	Author(s)

Smart peptide nanotube: Targeted immobilization via molecular recognition and size/packing density-controlled nanocrystal coating via biomineralization	H. Matsui, R. Djalali, Y. Chen, I. Banerjee, L. Yu
Spontaneous formation of metal oxide nanostrands in aqueous media	I. Ichinose
Nano-architectures derived from imprinting and templating of ultrathin metal oxide layers	T. Kunitake
Nanoengineered polyelectrolyte capsules: Microcages for chemical reactions and delivery nanosystems	G. Sukhorukov
Polyion/MnO_2 nanoparticles multilayer films for electrocatalytic applications	L. Espinal, J. Rusling, S. Suib
Nanoengineering of functional capsules by layer-by-layer self-assembly technique	Z. Dai, H. Moehwald
"Marriage" of LbL-nanoassembly and traditional lithography for microelectronic element production	Y. Lvov, F. Hua, J. Shi, T. Cui, M. McShane
Polymer-mediated self assembly of magnetic nanoparticles	S. Sun

Polyelectrolyte multilayers constructed from mixed polyelectrolyte solutions	V. Ball, M. Debreczeny, F. Boulmedais, B. Szalontai, J. Voegel, P. Schaaf
Carbon nanotube based composite materials	A. Mamedov, M. Olek, N. Kotov
Bioactive coatings based on functionalized multilayered polyelectrolyte films	J. Voegel, N. Jessel, J. Chluba, P. Schaaf, J. Ogier
Biofunctional polyelectrolyte multilayer surfaces	J. Schlenoff, J. Jaber, D. Salloum, P. Chase
Nano-electronic sensors: Chemical detection using carbon nanotubes	A. Star, K. Bradley, J. Gabriel, G. Gruner
Electro-optic thin films self-assembled via multiple hydrogen bonds from vapor phase	P. Zhu, H. Kang, A. Facchetti, G. Evmenenko, P. Dutta, T. Marks
Peroxidase activity of enzymes bound to the ends of single-wall carbon nanotube forest electrodes	X. Yu, D. Chattopadhyay, I. Galeska, F. Papadimitrakopoulos, J. Rusling
Hydrogen bonding and stability regimes of weak polyelectrolyte multilayers	S. Sukhishvili, V. Izumrudov
Adaptive surface nanoassemblies: Tuning macroscopic properties through reversible nanoscale reorganization	V. Tsukruk
Polyelectrolyte multilayers as molecularly tunable biomaterials	M. Rubner

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95-F06	San Francisco					9/10/06

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